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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/586,335	01/09/2007	Takahiro Yamashita	293627US40PCT	3096
22850	7590	09/18/2009		
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER NORRIS, JEREMY C	
			ART UNIT 2841	PAPER NUMBER
			NOTIFICATION DATE 09/18/2009	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/586,335

Applicant(s)

YAMASHITA ET AL.

Examiner

Jeremy C. Norris

Art Unit

2841

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/CIS)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2000-340916 (Ricoh) in view of US 6,331,376 B1 (Kojima).

Ricoh discloses, referring primarily to figure 3, a multilayer printed circuit board including a substrate having an inner-layer conductor circuit (4) and one or more outer-layer conductor circuits (10A, B) formed on the substrate with an insulating layer laid between the substrate and outer-layer conductor circuit, wherein: a strain gauge (10) having a resistive element ([0006]) is buried in the substrate, and electrodes electrically connected to the resistive element are exposed to outside from the resin film and are electrically connected at exposed portions thereof to a viahole (11b). Ricoh does not specifically disclose that the resistive element is held tight between resin films formed from polyimide or thermoplastic resin [claim 1]. Instead, Ricoh generically states that the resistive element is held tightly between two insulating films (2). However, it is well known in the art to form insulating films of polyimide as evidenced by Kojima (col. 9, lines 45-50). Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to use polyimide as the insulating film in the invention of Ricoh as is known in the art and evidenced by Kojima. The motivation for doing so would have been to use a material having a high dielectric constant to avoid unwanted shorting. Moreover, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Additionally, the modified invention of Ricoh teaches, wherein the resin films are formed from polyimide [claim 2], wherein the viahole is filled with a conductive material ([0005]) [claim 3], having a plurality of solder bumps or balls formed on the outermost layer thereof ([0003]) [claim 4].

Similarly, Ricoh discloses, a testing piece for the printed circuit board including a substrate having an inner-layer conductor circuit (4) and one or more outer-layer conductor circuits (10A, B) formed on the substrate with an insulating layer laid between the substrate and outer-layer conductor circuit, wherein: a strain gauge (10) having a resistive element ([0006]) is buried in the substrate; and electrodes electrically connected to the resistive element are exposed to outside from the resin film and are electrically connected at exposed portions thereof to a viahole (11b). Ricoh does not specifically disclose that the resistive element is held tight between resin films formed from polyimide or thermoplastic resin [claim 5]. Instead, Ricoh generically states that the resistive element is held tightly between two insulating films (2). However, it is well known in the art to form insulating films of polyimide as evidenced by Kojima (col. 9, lines 45-50). Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention to use polyimide as the insulating film in the invention of Ricoh as is known in the art and evidenced by Kojima. The motivation for doing so would have been to use a material having a high dielectric constant to avoid unwanted shorting. Moreover, it has been held to be within the general skill of a worker in the art

to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Moreover, the modified invention of Ricoh teaches, wherein the resin films are formed from polyimide [claim 6], wherein the viahole is filled with a conductive material ([0005]) [claim 7], having a plurality of solder bumps or balls formed on the outermost layer thereof ([0003]) [claim 8].

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy C. Norris whose telephone number is (571)272-1932. The examiner can normally be reached on Monday - Thursday, 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean A. Reichard can be reached on 571-272-1984. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jeremy C. Norris
Primary Examiner
Art Unit 2841

/Jeremy C. Norris/
Primary Examiner, Art Unit 2841